[**Algorithm List and Technique List**](https://www.facebook.com/groups/bengaliprogramming/)

**Data Structure:**

* Stack
* Queue
* Priority Queue
* Linked list
* Heap
* Hash table
* Map, HashMap
* Disjoint Set, Union Find
* Tree, Binary Tree
* Binary Search Tree
* Trie
* Suffix Array
* Segmented Tree, Range minimum Query
* Binary Indexed Tree(BIT)
* Heavy light Decomposition

**Sorting:**

* Bubble Sort
* Selection Sort
* Insertion Sort
* Quick Sort
* Merge Sort
* Counting Sort
* Radix Sort
* Bucket Sort
* Heap Sort

**Searching:**

* Linear Search
* Binary Search
* Ternary Search

**Dynamic Programming:**

* Rod Cutting
* Maximum Sum (1D, 2D)
* Coin Change
* Longest Common Subsequence
* Longest Increasing subsequence, Longest Decreasing Subsequence
* Matrix Chain multiplication
* Edit Distance
* 0-1 Knapsack
* Bitmask DP
* Traveling Salesman problem
* Digit DP

**Greedy Algorithm:**

* Activity selection/Task scheduling problem
* Huffman coding
* Knapsack problem

**Graph Theory:**

* Graph Representation(matrix, list/vector)
* Breadth First Search(BFS)
* Depth First Search(DFS)
* Topological Sort
* Strongly Connected Component(SCC)
* Minimum Spanning Tree(kruskal, prim)
* All pair's shortest path(Floyd Warshall)
* Djkastra algorithm
* Bellman Ford Algorithm
* Directed Acyclic Graph
* Bipartite Matching
* Max-Flow, Min-cost max-flow
* Cayley's Theorem
* Articulation Point, Bridge
* Euler tour/path
* Hamiltonian Cycle
* Stable Marriage problem
* Chinese Postman problem

**Mathematics and Number Theory:**

* GCD
* LCM
* Euler Totient
* Prime finding(sieve)
* Prime factorization
* Factorial
* Fibonacci
* Counting, Permutation, combination
* Exponentiation
* Modular Arithmetic
* Euclid, Extended euclid
* Josephus Problem
* Farey Sequence
* Euler's phi
* Catalan numbers
* Burnside's lemma/circular permutation
* Modular inverse
* Probability
* Chinese Remainder Theorem
* Gaussian Elmination method
* Dilworth's Theorem
* Matrix Exponentiation
* Determinant of a matrix
* RSA public key crypto System

**Computational Geometry:**

* Pick's Theorem
* Convex hull
* Line Intersection
* Point in a polygon
* Area of a polygon
* Line Sweeping
* Polygon intersection
* Closest Pair

**Game Theory:**

* Take Away game
* Nim
* Sprague-grundy Number

**String:**

* Naive String matching
* Rabin karp Algo
* Finite Automata
* Knuth-Marris-Pratt Algo
* Manacher's Algo
* Aho korasick's Algo
* Boyer-Moore algo

**Others:**

* Recursion
* C++ Standard Template Library(STL)
* Backtracking
* Hungarian Algorithm

**Data Structure and Algorithsm Tutorial by CODECHEF**

* <https://goo.gl/S1uJxq>

**Another list by some "Guru's":** [http://www.quora.com/ACM-ICPC-1/What-are-some-algorithms-and-data-structures-which-should-definitely-be-included-in-ones-ACM-ICPC-team-notebook#](http://www.quora.com/ACM-ICPC-1/What-are-some-algorithms-and-data-structures-which-should-definitely-be-included-in-ones-ACM-ICPC-team-notebook)